DMSO

Modular Reconfigurable C^{4}I Interface (*MRCI*)

Requirements (Draft)

21-22 February 1996
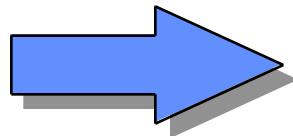
Requirements Evolution

- Discussions within community
- High Level Architecture effort
- Related programs top level requirements
- MRCI Requirements Workshop (Groupware)

Current

→

Work-in-Progress

- C^4I & Simulation POC Interviews
- MRCI Requirements Synthesis
- MRCI Requirements Document

Requirements Status

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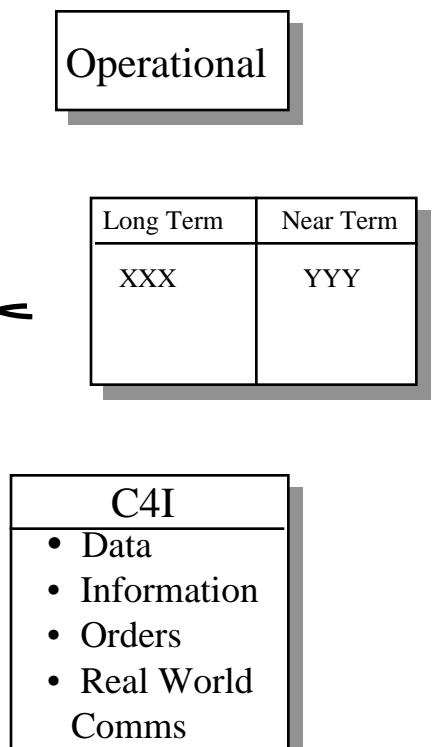
Data

MRCI Groupware
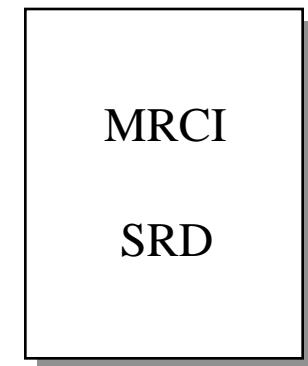
Interview Data
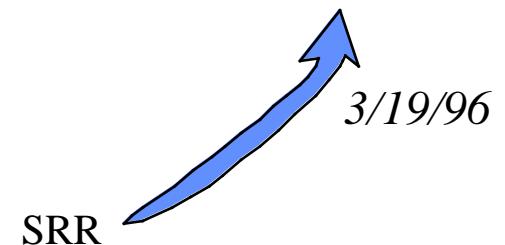
Requirements Perspective

Operational

Long Term	Near Term
XXX	YYY

Categories & Groupings

Issues

C4I
- Data
- Information
- Orders
- Real World Comms

Synthesis & Deliverables

MRCI SRD

We are here @ "Interim SRR"

2/21/96

SRR

3/19/96

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20 Feb 96   3

Groupware

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- Collaborative Planning Tool

- Brainstorming multiple topics simultaneously

- Electronic recording & sharing

- Attendees @15 Feb Workshop

MRCI PM	-	Tom Tiernan, NRaD
MRCI Engr	-	Mark Cosby, John Park, Michael Schlabach, SAIC
JSIMS	-	Peter Christensen, Mitre
WARSIM	-	MAJ Tom Loper, Jonathan Glass, STRICOM
Army	-	Joe Henry, DA/NSC
Army	-	Dick Brown, TPIO-ABCS
Army	-	Dan Buchberg, MCS/P BCBL
Army	-	CAPT Jerry Bastian, NSC
Air Force	-	Paul Driscoll, ESC/AVMW (PTI)
Air Force	-	Sheila Cane, ESC/AVB (Dynamics Research Corp)
CFOR	-	Susie Hartzog, NRaD
CFOR	-	Marty Howard, ARL:UT (AFATDS)
CFOR	-	Jack Berkowitc, Mitre (USMC)
STOW	-	John Zwirner, Jesse Aronson, Judy Clark, SAIC
ALSP	-	Laura Feinerman, Mitre

C4I & Sim Interviews

In progress, to include...

|	
CTAPS	STOW
MCS/P	WARBREAKER
AWSIM/R	JSIMS
AF/SAF	AFSOM
AFATDS	WPC/GDS/ALSP
CBS	AES/EPG
ALSP Confederation	Eagle/ModSAF
NASM	
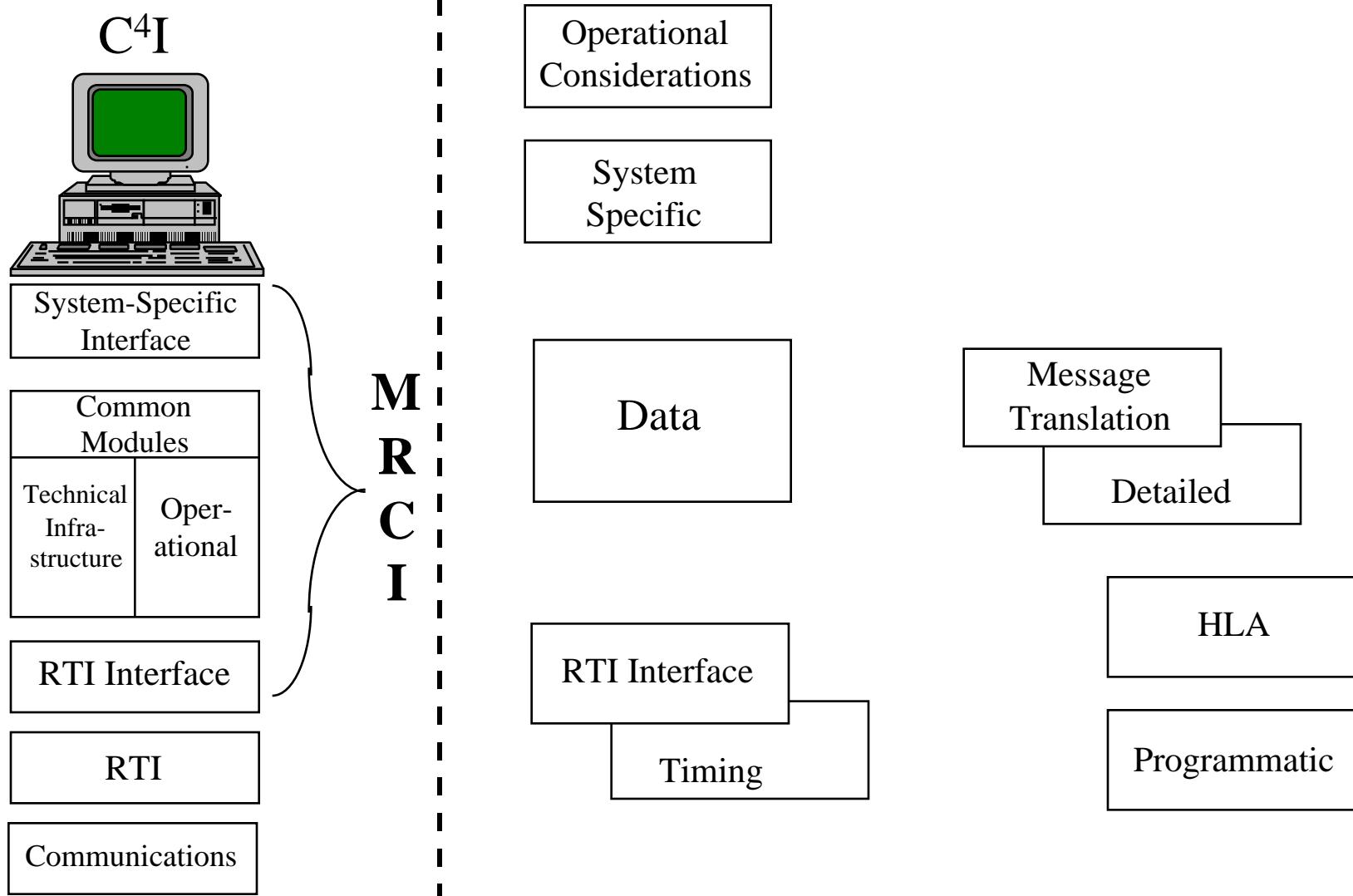
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This "Key" is provided for notations on the following viewgraphs

- GR = General Requirement
- LT = Long Term Requirement
- ST = Short Term Requirement

REQUIREMENTS

C⁴I

System-Specific Interface

Common Modules

Technical Infra-structure	Oper-ational

RTI Interface

RTI

Communications

M R C I

Operational Considerations

System Specific

Data

RTI Interface

Timing

Message Translation

Detailed

HLA

Programmatic

Operational Requirement

- Transparent to user (*GR, LT*)
- Take into account battlefield effects when disseminating messages (LOS, environment, damage) (*LT, ST*)
- Pass "health" (operational vs degraded vs down) status of live system back to RTI monitoring facility (*LT*)
- Label messages/data as "exercise" (*LT*)

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- C^2 information within simulation is via Command & Control Simulation Interface Language (CCSIL)

- Encapsulation of message/data link specific in Common Modules (*GR, LT, ST*)

- Translate C^4I output format to CCSIL messages (*GR, LT, ST*)
  - Output format to include voice, data, image
    - data (*ST*)
    - voice (*ST*)
    - image (*LT*)

- Translate CCSIL messages to C^4I input format (*GR, LT, ST*)

Message Translation (Detailed)

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- Transmit CCSIL messages (*LT, ST*)
- Perform CCSIL to AFATDS VMF and AFATDS VMG to CCSIL message conversion (*ST*)
- Translate CCSIL to/from USMTF (*ST*)
- Perform CCSIL to/from TACFIRE COM (*ST*)
- Perform CCSIL to/from TACFIRE BOM (*ST*)
- Enable CTAPS ATO to be seamlessly executed in AWSIM/R (*ST*)
- Enable AWSIM/R mission reports & damage information relevant to CTAPS to be sent to CTAPS (ST)
- Perform CCSIL to/from TACFIRE FIXED (ST)

Data Requirements

- All information (real-to-sim, sim-to-sim, & real-to-real) must pass through MRCI (*LT*)

- Non-simulation data comms must be routed and logged correctly outside of the RTI by the MRCI communications infrastructure (e-mail & OPNOTES) (*ST*)

- Provide batch mode to download C4I databases to sim to support rapid (<100 hr) scenario generation (*LT*)

- Provide ability to attach C^{4}I to an entity and share attributes with the entity (*LT, ST*)

- Perform dead reckoning type functions (*LT, ST*)

- Facilitate data collection for FOM and non-FOM data (LT, ST)

- Ability to interoperate with federations via all five RTI service categories (*GR, LT, ST*)

- Provide Intelligent SAF address/subscription identification (*LT*)

- Recognize which C^{4}I device needs to receive a particular CCSIL message (*LT, ST*)

- Service for registering live systems to federation (*LT, ST*)

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- Forward messages between systems in a timely manner (*GR, LT, ST*)

- Operate at same speed as real world system, or with delay that does not impact operations (*GR, LT*)

- Accommodate C^4I systems that can not handle data in its future (faster-than-real-time simulations) (*LT*)

- Support graceful degradation of connectivity

- Provide mechanism for re-sync with C^4I following degraded operations (*LT*)

- Develop FOM for each experiment (*ST*)
- Develop SOM (*ST*)

System Specific Requirements

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- Interface with MSE (*LT*)

- Interface with EPLRS NCS (X.25) (*LT*)

- Interface with ATCCS LAN (IEEE 802.3) (*ST*)

- Interface with tactical 2-wire and 4-wire comms (*ST*)

- Perform hardware acknowledgement at MRCI (*GR, LT, ST*)

Programmatic Requirements

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- COTS Hardware (*ST*)

- Low cost (<$10K/unit) (*LT*)

- VV&A (*LT*)

- Incorporate DII/GCCS Common Operating Environment (*LT*)

Issues/Discussions